

REMARKS

A Request for Continued Examination (RCE) is being filed concurrently herewith to further prosecute this application

Claims 1-3, 6-9, 12, 13, 16-19, 21, and 22 are now pending in the application. Claims 1 and 11 have been amended, claim 10 has been cancelled, and claims 21 and 22 have been newly added. The basis for the amended claims may be found in the specification, drawings and/or claims of the original application and no any new matter has been introduced into the disclosure of the invention. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

35 U.S.C. § 102(b) Rejections

Claims 1-3 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Yano et al. (JP2002006815). The rejection is respectfully traversed at least for the reasons provided below.

Regarding claim 1, the present invention provides a display apparatus including a liquid crystal panel having a first area and a second area, in response to an image signal, the first area and the second area capable of displaying variable data; a first light source for illuminating the first area, the first light source independently and selectively entering into a first state and a second state different from the first state; and a second light source for illuminating the second area, the second light source independently and selectively entering into a third state and a fourth state different from the third state; wherein the first area is visually brighter than the second area when the first light source is in the first state and the second light source is in the fourth state.

As described in paragraph [0007] of the specification, one aspect of the present invention is to provide a liquid crystal display apparatus with multiple light sources, and each light source is independently controlled based on its corresponding state to conserve power energy. For example, for an LCD display apparatus of a mobile phone, the first area 11 is configured to display first data 21 like general communication information, such as battery status, phone number, or communication status. The second area 12 is configured to display second data like image information, such as received images, personalized graphics or texts. When the mobile phone is in a standby mode, the first light source 31 can be in ON state, and the second light source can be in OFF state. Alternatively, the first light source 31 can be in ON state of a lower brightness level, and the second light source can be in OFF state. Therefore, the power can be conserved, and light provided by the first light source 31 is bright enough to show the communication information in the first area. In other words, when the first light source 31 is in ON state, and the second light source is in OFF state, the first area is visually brighter than the second area viewed by a naked eye.

When the action of inputting or checking information is performed, the second light source 32 can be in ON state of a maximum brightness level, and the first light source 31 can remain in the standby state (lower power consumption state) or can be changed from the lower brightness level to the higher brightness level. Moreover, when the first area 11 and the second area 12 are together to display complicated information, the first and second light sources 31 and 32 can both be in the ON state of maximum brightness level to illuminate these two areas 11 and 12. That is, in response to an image signal, the first area 11 and the second area 12 are capable

of displaying variable data, such as display different data or cooperating to display complicated information.

In other words, by independently controlling states of the first and second light sources to adjust the brightness of different areas, the advantage of conserving power can be achieved, and the capability of displaying complicated information on both areas 11 and 12 can also be established.

In contrast, Yano et al. disclose a liquid crystal display device, which controls the luminescence of a plurality of fluorescent tubes, L1, L2, ..., and Ln sequentially to eliminate animation blur caused by a moving image. In other words, the object of Yano et al. is to eliminate the animation blur so that any difference in brightness shown on the display panel cannot be visually recognized by a naked eye. Applicants respectfully submit that Yano et al. fail to teach that the light sources are independently controlled so that lights illuminating on different areas will be visually different.

Moreover, as shown in Figs. 3 and 4, Yano et al. disclosed a backlight device with 5 fluorescent tubes, L1~L5, corresponding to regions B1~B5, respectively. Each power source 13b of the fluorescent tube is initiated by a signal in a predetermined time delay (a pulse duty). The fluorescent tubes L1~L5 are successively turned on in accordance with the scanning time of the panel 10. However, as illustrated in paragraphs [0023] and [0032], the luminescence time for each fluorescent tube of Yano et al. is reduced. Accordingly, to achieve the same brightness, the selection of supply voltage must be considered. If the number of fluorescent tubes increases, the duty of the backlight becomes short, and the brightness of the display screen will decrease

significantly. In order to achieve enough brightness in a short time of luminescence, the power of each fluorescent tube must be increased. In other words, the advantage of power conservation, i.e. by maintaining the light source in a lower power consumption (standby) state while no information is to be displayed in a specific area, is not recognized by Yano et al. Yano et al. further fail to disclose that the light sources are independently controlled so that lights illuminating on different areas will be visually different so as to reduce power consumption.

Therefore, the Applicants respectfully submit that the amended claim 1 satisfies the patentability requirement and is allowable. In addition, claims 2, 3, and 6-9 respectively depend directly or indirectly on the allowable claim 1 and include further features.

Regarding claim 11, Applicants respectfully submit that claim 11 as presently amended is not anticipated by Yano et al. Claim 11 has now been amended to make it clear that a display system includes a liquid crystal panel having a first area and a second area, in response to an image signal, the first area and the second area capable of displaying variable data; a first light source for illuminating said first area, the first light source independently and selectively entering into a first state and a second state different from the first state; a second light source for illuminating the second area, the second light source independently and selectively entering into a third state and a fourth state different from the third state; and a processor for determining states of the first light source and the second light source; wherein the first light source and the second light source are independently controlled so that the first area is visually brighter than the second area when the first light source is in the first state and the second light source is in the fourth state.

The Applicants submit that these features are not taught by Yano et al. Instead, Yano et al. disclose a liquid crystal display device, which sequentially turns on fluorescent tubes to eliminate the animation blur and increases power to maintain enough brightness. Yano et al. fail to disclose that the light sources are independently controlled so that lights illuminating on different areas will be visually different, and the power consumption can be achieved. The advantage of power conservation, i.e. by maintaining the light source in a lower power consumption (standby) state while no information is to be displayed in a specific area, is not recognized by Yano et al.

Therefore, the Applicants respectfully submit that the amended claim 11 satisfies the patentability requirement and is allowable. In addition, claims 12, 13, and 16-19 respectively depend on the allowable claim 11 and include further features.

35 U.S.C. § 102(b) Rejections

Claims 1-3 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Whittaker et al. (US5657004). The rejection is respectfully traversed at least for the reasons provided below.

Regarding claims 1 and 11, Applicants respectfully submit that claims 1 and 11 as presently amended are not anticipated by Whittaker et al. Claims 1 and 11 have now been amended to make it clear that a display apparatus includes a liquid crystal panel having a first area and a second area, in response to an image signal, the first area and the second area capable of displaying variable data; a first light source and a second light source, which are independently controlled so that the first area is visually brighter than the second area when the first light source is in the first state and the second light source is in the forth state.

For example, for an LCD display apparatus of a mobile phone, the first area 11 is configured to display first data 21 like general communication information, such as battery status, phone number, or communication status. The second area 12 is configured to display second data like image information, such as received images, personalized graphics or texts. When the mobile phone is in a standby mode, the first light source 31 can be in ON state, and the second light source can be in OFF state. Alternatively, the first light source 31 can be in ON state of a lower brightness level, and the second light source can be in OFF state. Therefore, the power can be conserved, and light provided by the first light source 31 is bright enough to show the communication information in the first area. When the action of inputting or checking information is performed, the second light source 32 can be in ON state of a maximum brightness level, and the first light source 31 can remain in the standby state (lower power consumption state) or can be changed from the lower brightness level to the higher brightness level. Moreover, when the first area 11 and the second area 12 are together to display complicated information, the first and second light sources 31 and 32 can both be in the ON state of maximum brightness level to illuminate these two areas 11 and 12. In other words, by independently controlling states of the first and second light sources to adjust the brightness of different areas, the advantage of conserving power can be achieved, and the first area 11 and the second area are capable of displaying variable data, such as displaying different data or cooperating to display complicated information in response to an image signal.

The Applicant submits that these features are not taught by Whittaker et al. Instead, Whittaker et al. disclose an electronic display device that shows discreet visual image

sequentially. As described in column 5 from lines 60-67 to column 6 lines 1-7, in the device 10 shown in FIG. 1, the transparency 24 includes four transparency portions 26, 28, 30, and 32. A discreet visual image is shown on each of the four transparency portions 26, 28, 30, and 32. In FIG. 1, the discreet visual representation is shown as "1", "2", "3", and "4" on the four transparency portions 26, 28, 30, and 32, respectively. A blackened-out divider portion 36 extends between the transparency portions 26, 28, 30, and 32 to help maintain the discreetness of the four images 26, 28, 30, and 32. In other words, each of the four images 26, 28, 30, and 32 of Whittaker is fixed on the transparency 24 and not variable.

Therefore, the applicants submit that Whittaker fails to teach a liquid crystal panel including different areas capable of displaying variable data in response to an image signal. The amended claims 1 and 11 define over Whittaker satisfying the patentability requirement and are allowable. In addition, claims 2, 3, 6-9, 12, 13, and 16-19 respectively depend on the allowable claims 1 or 11 and include further features.

Regarding new claims 21 and 22, Applicants respectfully submit that the basis of claims 21 and 22 can be found in the specification of the original application and no new matter has been introduced. As recited in paragraphs [0016] and [0025], the display apparatus can be a liquid crystal display implemented in a mobile phone. Besides the mobile phone, the display apparatus can be applied to other electronic devices, such as personal digital assistances, digital cameras, and the like. Furthermore, in paragraph [0022], the processor 60 determines states of the first light source 31 and the second light source 32 according to image signal or display status of the panel 10. Claim 21 as presently added provides a mobile device including similar features

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recited in claim 11. As the reasons stated above, Applicants respectfully submit that claim 21 also defines over the cited references and should also be allowable. In addition, claim 22 depends on the allowable claim 21 and includes further features.

35 U.S.C. § 102(e) Rejections

Claims 1-3 and 10-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kobayashi et al. (US20040114396A1).

Kobayashi et al. disclose an illumination device to reduce a movement blur and a tailing phenomenon. Kobayashi et al. filed the application on October 29, 2003. However, the present invention claims priority of Taiwan Patent Application No. 91133762 filed on November 19, 2002, which antedates Kobayashi's filing date. Taiwan Patent Application No. 91133762 has been fully translated into English and submitted for consideration. Applicants respectfully submit that the rejection should be withdrawn.

In view of the amendment and arguments set forth above, the Applicants respectfully submit that all pending claims 1-3, 6-9, 16-19, 21, and 22 are in condition for allowance, and respectfully request the reconsideration and withdrawal of the rejections. Should the Examiner have any questions or determine that any further action is desirable to place this application in even better condition for issue, the Examiner is encouraged to telephone applicants' undersigned representative at the number listed below.

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Attachment: Translation of priority document TW Application No. 91133762

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